## The EMS Authority's Special Grant Program

The Health and Safety Code (Sec. 1797.200) permits a county to develop an EMS program. Each county developing and EMS program must designate a local EMS agency, which may be the county health department, an agency established and operated by the county, an entity with which the county contracts for the purposes of EMS administration, or a joint powers agency. Funding of local EMS agencies is generally the responsibility of the county establishing the EMS program. In California, the development of EMS systems has been varied as a result of the state's large size, geographical features, diverse population distribution, and differing availability at the local level of adequate finances and other resources. In an effort to promote the development and maintenance of EMS systems, some state and federal funding is available to assist local EMS agencies in maintaining, developing, improving, and evaluating local services.

The EMS Authority administers two local assistance funding programs. They are (1) the State General Fund and, (2) the Federal Preventive Health and Health Services (in California called Prevention 2000) Block Grant.

Prevention 2000 Block Grant funds (approximately $2 million) are allocated to local EMS agencies annually for special projects to develop, implement, and improve local and state EMS capabilities.

## Special Project Grant Selection Process

The EMS Authority utilizes a completitive grant selection process. Proposals are sorted and reviewed by target areas to allow an organized and equitable review process.

A review committee consisting of 3-6 reviewers drawn from the EMS community convenes in Sacramento. The committee consists of EMS administrators, medical directors, and subject experts as determined by the EMS Authority. Individuals do not serve on a target area committee for which their local EMS agency has submitted an application. There is one primary and one secondary reviewer for each grant application. They review in depth and present the project to the whole committee. All reviewers receive copies of all of the proposals being reviewed by the committee.

The reviewers make ranked recommendations for funding of projects and provide written comments on each proposal to the EMS Authority.

The EMS Authority makes the final selection of projects to be funded. Funds are allocated according to the ranking of the proposals. Amounts allocated are related to the appropriateness of the budget, the potential benefit, and the availability of funds.

EMS Authority provides a summary of the review committee's comments (positive and negative) for each proposal to help applicants improve future proposals for funding.

With respect to Special Project Grants, it is EMSA's goal to continue the funding stream to local EMS agencies. The specific use of these funds are to assist local EMS agencies to improve underdeveloped EMS system components.

It is also our goal to improve the transferability of projects, by examining the statewide application of proposed projects. We wish to reduce the reliance upon special projects to augment local EMS agency budgets.

It is our plan to distribute abstracts of projects annually and continue a participatory review of grant submissions to meet these goals.

# EMS Data Systems

**Grantee**
Alpine, Mother Lode (Mountain-Valley) EMS
**Project Number** EMS-4041
**Project Period** 06/25/95-06/25/96
**Project Amount** $68,333.00

**EMS Administrator**
Steve Andriese
1101 Standiford Avenue
Modesto, CA 95356
(209) 529-5085

## Introduction

For the past several years, the State EMS Authority has provided funding for local EMS Agencies to promote the development of management information systems, and to facilitate the standardization of data definitions throughout California. To further facilitate standardization, the Authority has published and distributed its "EMS Data Systems Standards" document. As LEMSAs move toward standardized data systems, aggregation of summary EMS systems data at the state level is becoming possible. Aggregation, manipulation and reporting of summary data will require programming and statistical expertise not readily available to the EMS Authority.

## Project Description

This project provided the State EMS Authority with programming, database management, and statistical expertise to implement an aggregate data collection system and produce statewide summary reports of EMS data.

## Tasks/Methodology

The following tasks were undertaken and accomplished during this project:

1. Provision of a repository for summary data collected from local EMS agencies:
   a. Ascertained what data and file formats could be readily obtained from local EMS agencies;
   b. Developed methods to define like geographic and demographic areas;
   c. Created database system to hold summary data from LEMSAs in a common format;
   d. Developed formats in which data can be received;
   e. Informed LEMSAs of formats in which data can be received.

2. Manipulation of data received from local EMS agencies to facilitate aggregate analysis:
   a. Developed utilities to convert data from receivable formats to standard format;

b. Received and converted data;
c. Installed and utilized tape backup system to protect data.

3. Consultation to the Authority and local agencies to support development, collection, and validation of summary information:
   a. Provided consultation via telephone on an as-needed basis.

4. Provision of aggregate reports from local EMS agency information:
   a. Identified population bases for which data is available;
   b. Grouped variables according to population bases and related confidence intervals;
   c. Developed and generated reports desired by State.

**Outcomes**

Quarterly reports of analyzed data for calendar year 1995 were distributed to local EMS agencies who had submitted data.

**Conclusion**

This project has been very successful and leaves behind a solid data structure and a basic set of utility programs for validating and reporting statewide EMS data. The project has established a process for collecting, validating and reporting summary EMS data from local EMS agencies throughout the state. On average, summary data is received from 30 of California's 52 counties each quarter. The EMS Authority anticipates that the continued reporting of statewide EMS data will, over time, improve the quality of the data being submitted and the number of counties participating in the project.

## Poison Control

**Grantee**
Contra Costa County EMS Agency
**Project Number** EMS-4042
**Project Period** 06/25/95-06/30/97
**Project Amount** $46,000.00

**EMS Administrator**
Art Lathrop
50 Glacier Street
Martinez, CA 94553
(510) 646-4690

Contract still open.

# Regional Disaster Medical Health Coordinator (RDMHC)

**Grantee**
Contra Costa EMS Agency
**Project Number** EMS-4043
**Project Period** 06/25/95-12/31/96
**Project Amount** $80,000.00

**EMS Administrator**
Art Lathrop
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Martinez, CA 94553
(510) 646-4690

## Introduction

Region II, comprised of the 16 northern California coastal counties, is one of six regions established by the State Office of Emergency Services for the coordination of disaster mutual aid. The Contra Costa County Health Officer has served as the Region II Regional Disaster Medical/Health Coordinator RDMHC) since 1990, historically responsible for coordinating the acquisition of medical/health mutual aid within Region II in support of events not affecting his region. In response to the Standardized Emergency Management System (SEMS) regulations the role of the RDMHC was expanded in 1995 to include response to events occurring within his region.

## Project Description

The focus of the sixth year RDMHC Project was to incorporate the SEMS in the RDMHC mutual aid process which included revising the then DRAFT Region II RDMHC Emergency Plan. Additional major objectives were to designate and orient a within-region but out-of-county alternate RDMHC, survey existing communications resources within the 16 coastal counties, and orient/train/exercise each of the Operational Area Medical/Health Coordinators in the 16 Region II counties. Additionally, establishing contact with individuals from other key mutual aid agencies and drafting a model mutual aid agreement were 6th year objectives.

## Tasks/Methodology

Staffing: Staffing of the Project included both a disaster planner with Office of Emergency Services background and a Project Coordinator with an Emergency Medical Services background. Operational Area Disaster Medical/Health Coordinators (OADMHCs) and alternates were identified from each of the 16 Operational Areas. A Region II out-of-county RDMHC alternate was designated and oriented. Training: A DRAFT RDMHC Emergency Plan was further developed and then revised to become SEMS compatible. An OADMHC mutual aid response orientation/training and a SEMS Introductory course was offered to the RDMHC, the Project staff, the 16 OADMHCs and alternates. A tabletop exercise and functional exercise were conducted with counties comprising Region II. Numerous communications exercises were conducted

with the OADMHCs to establish and maintain an ongoing association between the Region and Operational Areas. Agency Connections: Establishing contact with persons assigned to regional and state disaster response was carried out by way of meetings and phone conferencing. Contacts included: California Air National Guard; Humboldt Scenario planners; OES Coastal Region II staff including REOC activation conference; State OES RIMS training; SEMS Mutual Aid Regional Advisory Committee; CCLHO disaster subcommittee; mutual aid supplies vendors; OES Hospital Advisory Committee; and the Governor's Conference on Terrorism. The Project also assembled OADMHCs and/or their alternates from each of the 16 counties at quarterly meetings to discuss disaster planning issues.

**Communications**

A communications survey was distributed to determine modes of communications internal to Operational Areas and potentially common to all counties and numerous test fax communications were performed. Resource tallies were developed and forwarded for eventual return to the RDMHC Project. Other: Project staff did not begin development of DRAFT model Regional mutual aid agreements awaiting a model from the state.

**Outcomes**

The RDMHC Emergency Plan was revised to conform to SEMS. A communications survey revealed modes of communication available to Operational Areas. An update of the Resource Manual (formerly known as the Bay Area Medical Mutual Aid <BAMMA>) is underway. Contact lists and communications surveys and exercises were developed, utilized, compiled as were hospital resource and medical transport surveys.

**Conclusion**

The relationships established with each of the Operational Areas, the state and federal agencies and other disaster response agencies enhances the Region's ability to provide disaster medical/health mutual aid response to not only outside but within region events.

# Countywide EMS-MIS Data System

**Grantee**
El Dorado County EMS Agency
**Project Number** EMS-4044
**Project Period** 06/25/95-12/31/96
**Project Amount** $100,000.00

**EMS Administrator**
Stephen Sarine
415 Placerville Drive, Suite J
Placerville, CA 95667
(916) 621-6500

**Introduction/Project Description**

On June 25, 1995, the State Emergency Medical Services Authority awarded a Block Grant to the El Dorado County EMS Agency. The purpose of the grant was to develop, implement and manage a Countywide EMS-MIS data system utilizing pen-based/electronic medium Patient Care Reports (PCR's).

This grant was awarded based on the following problem statement: El Dorado County EMS Agency lacks an automated EMS data surveillance system. Without an automated EMS data system, EMS quality improvement, effectiveness, responsiveness and state data collection requirements cannot be accomplished, and EMS cannot keep pace with the needs of our growing county.

**Tasks/Methodology**

The project was developed under contract with professional EMS system hardware and software consultants. The system was developed and implemented in four (4) distinct phases:

Phase 1 - Minimum Data Set Development

The initial phase of the project identified the essential elements that defined the effectiveness of the EMS system. A project team was established with representation from each of the EMS providers in the county. The project team considered the State of California EMS Data System Standard as the minimum data set.

In addition, the project team identified that the minimum data set was not adequate as the sole means of patient care documentation. The project team considered a single database of all patient care information to be of utmost importance. In consideration of this, additional fields were added to the data set so as to establish a complete patient care record incorporating the minimum data set.

Phase 2 - Software Development/Hardware Purchase and Installation

Following the development of the data set, the project team evaluated several commercially available options to meet the needs of the system. Of the options evaluated, two were considered to meet the needs of the system and the specifications of the grant.

These two software programs were given more extensive evaluations. The team not only evaluated the ability to enter information, but also the ability to produce reports and export data to other systems. At the end of this evaluation period, only one product was found to meet the needs of the system. Westech was selected and a purchase agreement was negotiated.

During this process, the team also evaluated several hardware options. The hardware was selected and a pre-existing purchase agreement was used to purchase the hardware.

Several months were required by the team to develop the software tables so as to meet the needs of the minimum data set and the additional data required for complete patient care documentation. These tables were established to meet the initial needs of the system. However, the tables continue to be evaluated and updated through the Data Users Group described in Phase 4.

Phase 3 - System Training

During this phase, all members of the project team were given training by the software vendor. The team members were given the training under the "Train the Trainer" format. This would then facilitate the training of future employees.

In addition, four classes were given to field personnel. These classes consisted of a three hour didactic morning session and a three hour afternoon session with hands on experience entering practice calls.

Phase 4- Implementation/Evaluation

On December 31,1996, the system was placed on line with all the ALS providers. This required the delivery and installation of hardware and software at eleven sites totaling 19 ambulances and two hospitals.

A Data Users Group was then formed with membership from each site. The membership of the group was essentially the members of the data project team. The purpose of this group was, and still is, to identify the changing needs of documentation and to make recommendation for software improvements.

In the conclusion of this phase, an operational EMS-MIS system was fully implemented in El Dorado County.

**Outcomes**

The operational phase of the EMS-MIS data system has facilitated the following:

C Operational control over the completion of Patient Care Records through required and conditional fields have reduced data entry errors.

C Quality Assurance Reporting has been automated to evaluate the system in the aggregate in addition to the individual unit, employee and call level.

- An Electronic Bulletin Board providing field personnel with current information on policy, procedures, training, protocols and data base changes.

- Export capabilities for State Reporting and Ambulance Billing Systems.

**Conclusion**

The data system has provided a consistent, streamline and timely approach to patient care reporting countywide. Now, for the first time, the El Dorado County EMSA has the opportunity to not only evaluate the system, but to plan for its future.

# Regional Disaster Medical Health Coordinator (RDMHC)

**Grantee**
Fresno, Kings, Madera EMS Agency
**Project Number** EMS-4045
**Project Period** 06/25/95-06/25/96
**Project Amount** $30,000.00

**EMS Administrator**
Daniel Lynch
P.O. Box 11867
Fresno, CA 93775
(209) 445-3387

The EMS Authority did not receive the Abstract Report.

# Information Management System

**Grantee**
Fresno, Kings, Madera EMS Agency
**Project Number** EMS-4046
**Project Period** 06/25/95-06/25/9
**Project Amount** $74,990.00

**EMS Administrator**
Daniel Lynch
P.O. Box 11867
Fresno, CA 93775
(209) 445-3387

The EMS Authority did not receive the Abstract Report.

# Rural EMS System Development

**Grantee**
Imperial County EMS Agency
**Project Number** EMS-4047
**Project Period** 06/25/95-06/30/96
**Project Amount** $50,000.00

**EMS Administrator**
John Pritting
935 Broadway
El Centro, CA 92243
(619) 339-4468

The EMS Authority did not received the Final Report or Abstract Report.

# Trauma System Plan Data Collection

**Grantee**
Kern County EMS Agency
**Project Number** EMS-4048
**Project Period** 06/25/95-06/25/96
**Project Amount** $45,000.00

**EMS Administrator**
Frederick A. Drew
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Bakersfield, CA 93301
(805) 861-3200

## Introduction

In September 1994 the Kern County EMS Department began the formal process of developing a county trauma care system. An integral part of implementation was the necessary acquisition of computer hardware, and development of software, which would enable the Department to gather patient trauma data directly from hospitals. The new trauma registry would be integrated with an existing system for the collection and evaluation of prehospital patient data. In Fiscal Year 1995-96 the Department was awarded a Federal Block Grant in the amount of $45,000 for development of the system.

## Project Description

As originally conceived, the project would have linked a trauma center and all receiving hospitals in the system with the EMS Department for the transfer of data to a comprehensive trauma registry. That data would have been available for both evaluations of individual system participants, as well as the continuing quality improvement of the County's emergency medical services system. Project objectives involved included: evaluation of existing systems; selection and purchase of computer hardware and software; development of linkage software; system testing, evaluation and revision; and, implementation.

## Tasks/Methodology

Tasks were to be completed by EMS Department staff, with the assistance of a computer software consultant. Department staff traveled to evaluate existing systems, and the Regional Trauma Registry was selected. It was available at no cost to the Department, and appeared amenable to revision. Evaluation of system hospital data automation capabilities resulted in a major revision of the project budget, as funds were shifted from equipment purchases to software development.

## Outcomes

The Regional Trauma Registry proved less easily adaptable than hoped. Our software consultant struggled with idiosyncracies in the original programming techniques and structure, his work rapidly consuming the funding allocated for those services. At this stage, the registry revision is one-third complete and the Department is seeking

additional funding in order to complete the project.

The trauma registry which will eventually result will be integrated with the Department's online Automated Information Management System (AIMS), for the collection and evaluation of prehospital patient data, will provide a comprehensive system for trauma data analysis.

**Conclusion**

The trauma system plan data collection project, when completed, will provide Kern County with a fully integrated system of trauma data collection and analysis, capable of tracking trauma data from initial dispatch to eventual patient outcome. By consolidating the data obtained from prehospital providers via our online Automated Information Management System (AIMS), from a trauma center by downloading data provided by diskette, and from receiving hospitals, rehabilitation hospitals and coroner via Teleform scanable report forms, Kern County's trauma data collection system will provide the means for system wide quality improvement, and as a source of consolidated data for system participants.

# Regional Disaster Medical Health Coordinator (RDMHC)

**Grantee**
Los Angeles County EMS Agency
**Project Number** EMS-4049
**Project Period** 06/25/95-12/31/96
**Project Amount** $80,000.00

**EMS Administrator**
Virginia Hastings
5555 Ferguson Dr., Suite 220
Commerce, CA 90022
(213) 890-7500

## Introduction

Region I includes the counties of Los Angeles, Orange, Ventura, San Luis Obispo and Santa Barbara. Los Angeles County is the Seat for the Region I, RDMHC Grant. While Region I comprises only 8 percent of the California land area (12,738 sq. miles) it hosts 42 percent of the state population (13,239,400). In addition, Region I has undergone at least five federally declared disasters during the past four years. These declarations included fires, floods, earthquakes and civil unrest. The Federal Emergency Management Agency has spent more than $3.35 billion addressing these incidents.

Providing a systematic coordinated medical response including preestablished medical mutual aid agreements and maintained communication systems would reduce response time and care. This would subsequently reduce the economic and casualty costs associated with large disasters.

## Project Description

The purpose of the 1995-1996 Regional Disaster Medical Health Coordinator Grant #4049 was to identify and commission an individual to maintain the RDMHC staff position for OES Region I through the above fiscal period. Responsibilities of this position included but were not limited to the following: identify and assist in assigning Operational Area Disaster Medical Health Coordinators, develop and maintain disaster resource registries, create a Regional Disaster Plan, identify and implement training schemes, determine a viable Regional communication system, conduct routine exercises, coordinate Medical Mutual Aid Agreements, direct quarterly meetings, prepare quarterly reports, serve as liaison with public and private disaster response agencies and serve as an Agent of the State EMS Authority for all disaster correspondence, preparation, response and recovery.

## Tasks/Methodology

The position of RDMHC Staff was solicited through the Los Angeles County, Department of Health Services Employment Listings. Subsequent responses were subject to multiple interviews jointly conducted by Los Angeles County and State EMSA staff. Operational Area representatives were chosen by individual county Health Officers. The

resource registry was created using the data base software program FoxPro. Annual surveys were conducted to update and maintain these listings. Initially, a separate Region I, RDMHC Disaster Plan was written. It was later determined a Unified Plan including all Operational Areas within the Southern Region would provide a broader, more systematic response approach. This decision was based on the high frequency of disaster related events within these two Regions and the recent adoption of an Inter-Regional Medical Mutual Aid Agreement The Unified Plan was prepared under the auspices of the Standardized Emergency Management System through the combined individual RDMHC Plans of Regions I and VI.

The Inter-Regional Medical Mutual Aid Agreement was prepared to provide a standard agreement for the request, mobilization and application of medical mutual aid. It was written through the combined efforts of all Southern Region Operational Areas. The final plan will be completed during the 1996-1997 RDMHC grant period.

Training schemes for SEMS and HEICS were provided through local EMS agencies, the Governor's Office of Emergency Services, private ambulance companies and area hospitals. Additional training in non-structural hazard mitigation for hospital/clinic representatives was provided through the Annual Disaster Conference hosted by the Los Angeles County EMS Agency.

Regional disaster communication was maintained primarily through telephone and fax services. The OASIS satellite telephone provides contact among all regional and state EMS Agencies. Other regional communication instruments include the local HEAR radio system and the newly acquired, transportable satellite telephone system. Acquisition of the transportable satellite telephones was accomplished through the solicitation of other federal disaster resources.

Quarterly meetings, routine exercises, regional reports and appropriate correspondence were maintained through ongoing dialogue between Regional Operational Areas and the RDMHC.

A Geographic Information System was purchased for the future mapping and tracking of all regional medical resources. Several meetings were conducted among the various local and state disaster agencies to determine the most efficient and compatible system to install. It was ascertained by the Los Angeles County EMS Agency to utilize a simple mapping software that is exportable for state and regional use. Application of this system is expected to be completed during the 1996-1997 RDMHC grant period. All subsequent software will be shared with other regions and state agencies.

**Outcomes**

Successful hiring of an RDMHC staff person and the subsequent selection of Operational Area Disaster Coordinators was accomplished. All of the regional managerial disaster personnel have been trained in either the SEMS and/or the HEICS systems.

Satellite communications have been acquired and monthly exercises are conducted to ensure viability. A Unified Southern Region RDMHC Disaster Plan was written and a final Medical Mutual Aid Agreement is now being prepared for signatures. Both documents will be finalized during the 1996-1997 RDMHC Grant period.

Region I routinely participates in multiple local, regional, state and federal disaster exercises. These events provide ongoing training for regional disaster response activation.

These exercises have improved the systematic disaster response among all Region I Operational Areas and ensured a communication link in the event of wide-area telephone and/or power outages. Although the financial benefits are speculative, the potential for casualty reduction is well noted.

The regional GIS system equipment and software were purchased. Development of a mapping scheme will begin in March 1997.

**Conclusion**

The overall implementation of the RDMHC Project has provided a unique opportunity to improve local and regional disaster preparation and response through active communication among all agencies, disaster training seminars and exercises, mutual aid establishments and standardized protocols.

# EMS vs. Civilian Transport of Victims of Major Trauma

**Grantee**
Los Angeles County EMS Agency
**Project Number** EMS-4050
**Project Period** 06/25/95-06/30/97
**Project Amount** $31,000.00

**EMS Administrator**
Virginia Hastings
5555 Ferguson Dr., Suite 200
Commerce, CA 90022
(213) 890-7500

Contract still open.

# Pediatric Airway Management

**Grantee**
Los Angeles County EMS Agency
**Project Number** EMS-4051
**Project Period** 06/25/95-06/30/97
**Project Amount** $123,000.00

**EMS Administrator**
Virginia Hastings
5555 Ferguson Dr., Suite 220
Commerce, CA 90022
(213) 890-7500

Contract still open.

# Injury Prevention Fairs

**Grantee**
Los Angeles County EMS Agency
**Project Number** EMS-4052
**Project Period** 06/25/95-12/31/96
**Project Amount** $25,300.00

**EMS Administrator**
Virginia Hastings
5555 Ferguson Dr., Suite 220
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(213) 890-7500

**Introduction**

After the American College of Surgeon's Reverification visit to the Los Angeles County trauma hospitals, the Association of Trauma Nurse Coordinators discussed the need for an organized approach to injury prevention. Rather than an individual hospital approach, it was decided to join resources and plan for an event that would provide injury prevention activities and education to the Los Angeles community as a whole. After much discussion regarding available options for location, the Los Angeles Zoo was chosen for its central location and diverse daily attendance. A Fair Planning Committee was formed.

**Project Description/Tasks**

An injury prevention fair was planned for June 8, 1996 to be held all day in the parking lot of the Los Angeles Zoo. The day included injury prevention demonstrations and education, along with safety device give-a-ways such as bicycle helmets and child car seats. Participants included:

- Los Angeles City Fire Department
- Blast Bicycle Rodeo
- Safety Belt Safe
- Discovery Toys
- California Highway Patrol
- American Red Cross
- Trauma Hospitals (Childrens, LAC+USC, St. Francis, Northridge)
- Encare
- Center to Prevent Handgun Violence
- Violence Prevention Coalition
- Department of Community Health Services
- Poison Control

Bicycle helmets were given away upon successful completion of the Blast program. Participants were shown injury prevention videos while waiting their turn. Safety Belt Safe assisted with the distribution of car seats to families along with necessary education on use and installation. Individual organizations provided information/education to participants based on their own expertise.

A collection of materials from all fair participants was collected and a "fair package" was developed to be distributed to all interested individuals who want to organize a community fair.

**Outcomes**

The fair was a success with an estimated 500-800 participants. Bicycle helmets and car seats were provided to families with the remaining distributed to the trauma hospitals for use with patients' families. Education materials, such as brochures and coloring books, were plentiful. A caricature artist illustrated the children using proper safety devices. A demonstration by the LA City Fire Department and Highway Patrol provided safety education.

Fair planning, as a group effort among trauma hospitals, provided the trauma nurse coordinators with the necessary skills to continue providing smaller community fairs in their geographical area. A "fair package" was developed to assist in the planning.

**Conclusion**

While the impact of a Fair on the community cannot be measured, any level of community education provided should be considered as having a positive impact. The resulting "designation" of the EMS Agency as the contact point for injury prevention materials allows for a central location for materials and planning information. Since the fair, many hospitals and individual organizations have contacted the EMS Agency for assistance in smaller community injury prevention activities.

# System Design Process

**Grantee**
Marin County EMS Agency
**Project Number** EMS-4053
**Project Period** 06/25/95-02/28/97
**Project Amount** $45,000.00

**EMS Administrator**
Ardith J. Hamilton
20 North San Pedro Road
Suite 2002
San Rafael, CA 94903
(415) 499-6871

## Introduction

In September of 1994, the Board of Directors of the Emergency Medical Services Administrators' Association of California authorized a working group to explore problems and potential solutions for EMS in California. The need for a defined process to address a long-range plan or vision for development and change within local EMS systems was identified and grant funds were sought for that purpose.

## Project Description

The goal of the project was to develop guidelines for use by EMS system personnel when considering system design issues. The work of the project was conducted by a task force comprised of EMS system personnel throughout the state. They met periodically throughout the grant period, working to develop the end product. Meetings were multi-disciplinary and were conducted with a facilitator. Task force members provided on-going comment and editing. Products from previous grant projects were utilized where applicable.

## Tasks/Methodology

Initially, individuals needed to staff the project (project managers and a facilitator) were located and contracts were made for their services. Individuals representing the various stakeholder groups of EMS were requested to commit to participation on the task force. A series of meetings were held, conducted by the facilitator, to explore and discuss pertinent issues. Task force members actively solicited input from colleagues and reported to their parent and/or professional organizations about the progress of the project. Input received was discussed and incorporated into the evolving project if appropriate. Two "full" drafts of the paper were submitted to the membership of the task force for input/editing. The final project was distributed to all EMS agencies/regions in California and to the "California EMS Organizations" list. It is available in print and on diskette in Word 6.0 format.

## Outcomes

The outcome of the project was a final consensus report "System Design Process". This report discusses five major areas of

concern within EMS systems. These five areas are data, system planning, financing, communications and legal issues. The report discusses system change and suggests a consistent method for selecting an evaluation process and proceeding with the implementation of carefully selected change. Worksheets are provided to assist with the process. An extensive bibliography is presented. This product is recommended for use by an EMS system or provider considering change . It will assist that system or provider to include all interested stakeholders, to evaluate the current process in an objective manner, to choose specific change because it is the "best" choice in that situation, and to proceed with implementation of the selected choice.

**Conclusion**

This project had an impact on the participants within the task force. They were able to work together collaboratively and to widen their knowledge of the issues of other disciplines within EMS. An EMS system choosing to use this process as a guide for system change will proceed in a systematic way and implement change in a well-planned manner, with reasonably foreseen issues considered.

# Trauma Plan Development

**Grantee**
Merced County EMS Agency
**Project Number** EMS-4054
**Project Period** 06/25/95-06/25/96
**Project Amount** $38,640.00

**EMS Administrator**
Chuck Baucom
410 West Main St., Ste. E
Merced, CA 95340
(209) 725-3537

## Introduction

Since the withdrawal of Merced County from the Alpine, Mother Lode, San Joaquin EMS Agency in July, 1993, the development of a trauma system has been a high priority issue. As a primarily rural county with an agriculturally-based economy, the county has an abundance of isolated, high speed, two lane county roads and state highways as well as the two primary north-south transportation corridors in California; Interstate 5 and State Highway 99. As a result, there is a high volume of motor vehicle-related trauma as evidenced by the fact that nearly 75% of all helicopter transports from the field setting are the result of a motor vehicle crash. The death rate from motor vehicle crashes and unintentional injury for Merced County is substantially higher than the statewide average.

As there is currently no formal system of trauma care and no triage guidelines in place, the care being provided is inconsistent and unorganized, and overtriage/undertriage is problematic. The literature has clearly demonstrated that in systems without an organized approach to trauma care, the preventable death rate for seriously injured patients may range from 30 - 40% (higher in rural areas), and that this preventable death rate drops significantly following the implementation of organized trauma care (the Orange County experience). We have every reason to believe that these numbers hold true in Merced County. As Merced County does not meet the trauma planning population requirements of the State Regulations, a population exemption was requested and granted on May 31, 1996 by the State EMS Authority in concurrence with the State EMS Commission.

## Project Description

The primary objective of this project was to develop a trauma plan which was both a patient advocacy document, ensuring that quality trauma services were available to meet the medical needs of the injured, regardless of the nature or severity of their injury, while remaining sensitive to the financial and resource limitations which are a reality in this fiscally challenged county. In an effort to achieve this broader goal, several preliminary objectives were established:

- Contract with a consultant experienced in trauma plan development, particularly in a rural environment.
- Establish a task force made up of all system participants including hospitals, the surgical community, prehospital providers and the community-at-large.
- Conduct a thorough system assessment regarding current resources, training levels, transport times throughout the county, etc.
- Actively solicit public, political and medical community support for the planning process.
- Develop facility and system standards which reflect quality medical care while maximizing the use of local resources, where appropriate.

**Tasks/Methodology**

**Contract with an Experienced Trauma Consultant**

An RFP document was developed with a scoring instrument which focused on the experience of the consultant. Specifically, we were seeking a consultant whose had experience related to rural EMS trauma issues and expertise in facilitation/coordination with a multiplicity of government and private organizations with conflicting agendas as well as jurisdictional issues. Following the proposal evaluations, The Abaris Group of Walnut Creek, California was chosen to assist the agency with this project.

**Development of a Multidisciplinary Task Force**

Invitations were extended to all hospitals, surgeons, prehospital providers and the Merced County Fire Chiefs Association for membership on the Task Force. Additionally, a notice regarding the Task Force formation was placed in the local paper soliciting lay public representation. The result was a good cross-section of public, medical community and public safety representatives that actively debated the issues during the plan development. This open debate was key to the agency and consultant's development of a plan which balances quality care and fiscal responsibility.

**System Assessment**

The consultant and agency staff conducted on-site interviews with each of the hospitals and prehospital providers to assess their administrative support for the planning process, physical plant makeup, staffing and training issues and operational policies to provide the framework for the initial draft plan development.

**Trauma System Standards Development**

The standards established by this trauma plan exceed those promulgated in state regulation and include many of the elements defined in the recent Emergency Medical Services for Children Project relating to trauma services. Additionally, there is a substantive list of personnel training and emergency department operational and

equipment requirements included in these standards which are in addition to those required by the state regulations.

**Outcomes/Conclusions**

The primary outcome, of course, was the development of a trauma plan for this rural EMS system which meets the needs of the injured while insuring that all facilities desiring to participate have an identified role to play. But rather than just a plan for managing trauma which has already occurred, it represents a comprehensive injury management strategy which outlines specific, achievable objectives for reducing the incidence of traumatic injury, improving the care of the injured and doing so in a financially responsible manner.

This plan was crafted, from the outset, to remain a dynamic document which must be regularly reviewed and amended to reflect changes in the delivery of health care in California and nationwide. No health care plan, in this time of health care delivery revolution, can remain stagnant without achieving obsolescence. To remain a viable blueprint for injury management in the future, this plan must facilitate changing health care reimbursement strategies while insuring that the public health and safety entrusted to the agency is protected by maintaining high quality medical standards for all who participate in the trauma system.

# Injury Prevention

**Grantee**
Merced County EMS Agency
**Project Number** EMS-5015
**Project Period** 09/01/95-09/30/96
**Project Amount** $74,160.00

**EMS Administrator**
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## Introduction

Injuries remain one of the most devastating events impacting people today. As a result of the social, medical and economic problems that injuries produce, injury prevention programs are emerging to combat the problems. One of the identified problems in dealing with injury prevention is the lack of data reflecting injury patterns. Although there are a multitude of datasets available, few, if any, accurately reflect the cause and intent of the injury. Most of the information has passed through several channels prior to being collected and, as a result, lost pertinent information. Prehospital care workers provide a unique resource in the collection of injury data. They are often the first on the scene of an injury and can provide valuable insight as to the mechanism and intent of the injury involved. With this in mind, the California State Emergency Medical Services Authority authorized the Merced County EMS Agency to design a prehospital injury information collection tool, identify at-risk groups, and implement an injury prevention program.

## Project Description

Phase 2 revolved around the collection and analysis of injury data from the prehospital environment. In this phase, a contract statistician reviewed, and an analysis was performed on the information collected from the prehospital care report forms and the external cause coding (e-coding) sheets during phase one. The Primary objectives for this phase of the injury prevention project were threefold:

Objective 1:
Identify High-Risk/High Incidence Populations

Objective 2:
Develop Specific injury prevention training programs targeting the high risk/high incidence populations identified

Objective 3:
Conduct Prevention Training Within the Target Population

## Tasks/Methodology

The statistician reviewed 2,470 injury

incidents recorded by the data entry clerk during phase one of this project (FY 94-95). The data collected included the e-code assigned, age, sex, ethnicity and the incident location. Data validation was performed to ensure that non-traumatic events were not coded as an injury.

Once the injury data was reviewed and validated, it was transmitted to the project consultant for analysis and recommendation on the target population for the prevention activities. While motor vehicle crashes were the highest incidence group, it was concluded that there were already numerous prevention programs throughout the community targeting driving-related injuries. One of the goals of the project was to identify an under served population for this prevention program. The second highest incidence group was falls, and on further analysis, a particularly high incidence of these injuries were in the 60 years and above population. Additionally, fall related injury accounts for the longest average hospital stays and hospital costs of all injury admits in California. There are currently no prevention programs in Merced County targeting the senior population. For these reasons, injury prevention in the senior population was chosen as the target population for the prevention program. As community involvement is critical to the success of the program, a task force was developed. Members from the Department of Public Health, the Merced County Area Agency on Aging, the Merced County Area Agency on Aging Senior Citizen Advisory Council, In-Home Supportive Services, Project CHERISH, and members-at-large from the community participated in the task force. Three recommendations for action were developed by the Task Force:

- Identify a Trackable Group
- Develop and Conduct a Community Needs Assessment Survey
- Evaluate and Identify Community Needs from the Survey

**Outcomes**

Members of the Task force requested that a target group be selected for training and education. In this way the efficacy of the program could best be evaluated through follow-up with a population that was both manageable in size and high-risk in nature. The Task force chose In-Home-Supportive Care-Services Clients (IHSS) as the target group. This group was chosen for several reasons:

1) The group was already categorized as a high risk group for injury.
2) The group could be tracked easily for a period of one year.
3) The providers of home care could be trained in fall prevention methods and provide one-on-one training to their clients.
4) As IHSS is found in all counties in California, the study could be reproducible in almost any location around the state.

A survey instrument was developed and distributed to the IHSS clients to clarify specific needs of this population and refine the training methodology. A draft home

assessment instrument has been developed to assess both general home safety risks as well as specifically targeting fall-related hazards.

**Conclusions**

While there have been unavoidable delays we remain confident that the prevention program, as outlined, will achieve the stated goal of providing a targeted prevention strategy for a high incidence population. Additionally, we wanted to ensure that we were not simply duplicating efforts being conducted elsewhere in the community. By focusing on the senior population, we will be providing a much needed resource for seniors which is unique in this community. By working in partnership with agencies and community resources focused on senior citizen issues we can provide for community ownership of the project, a critical element for the long-term success of such an endeavor.

While a lengthy illness to the lead staff person for the project contributed to delays in completing the objectives, other factors contributed as well. Agencies contemplating a similar project targeting the senior population would do well to coordinate early with senior advocacy groups for participation. They have enormous expertise, human resources and energy for such undertakings, and we found that several steps that had been taken initially had to be suspended once these groups' expertise was brought to the table.

Additionally, prior to establishing project strategies or training and home safety assessment instruments, a community needs assessment should be conducted to focus and refine the areas of particular need, as these can vary substantially from community to community.

The population in this country is aging. Today, 12% of the population is 65 years of age or greater, with 1% being 85 years of age or more. By the year 2025, it is estimated that as much as 20% of the population will be 65 or older, with 5% being 85 or older. Substantially less of the nation's population will be of working age and they will be required to pay for the services provided to an increasing population of seniors (as the "baby-boomers go gray).

A recent two-year government commission reviewed the Social Security System, specifically looking at the Social Security Trust Fund. This commission came to one major conclusion: The fund is failing and options such as investing the fund in the Stock Market must be explored if it is to remain viable. With funding issues such as this facing us with today's demographics, prevention strategies targeting the senior population are particularly timely, given the shift in age distribution facing us in the near future.

# Trauma System

**Grantee**
Napa County EMS Agency
**Project Number** EMS-4055
**Project Period** 06/25/95-09/30/96
**Project Amount** $35,500.00

**EMS Administrator**
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**Introduction**

Napa County has a population of approximately 118,000 and covers an area of 794 square miles. The Napa County EMS System encounters approximately 250-300 major trauma patients per year. Napa County was granted an exemption to the trauma system criteria relating to population in November, 1988 and Queen of the Valley Hospital was granted approval as a Level III trauma center.

**Project Description**

The primary goal of this project was to develop and describe and EMS/Trauma System Plan for Napa County. The following objectives were established to accomplish that goal:

1. Contract with a consultant experienced in EMS/Trauma plan development to assess the existing system and develop and describe an optimal system.
2. Establish an EMS/Trauma Steering Committee comprised of representatives from the Trauma Center, Base Hospital, ambulance services, City and County Fire departments, EMS aircraft and the EMS Agency to provide input to the consultant, review and revise on the new system, and recommend its adoption by the EMS Agency and the Board of Supervisors.
3. Determine a method of system evaluation and a mechanism for quality assurance and implement any program developed.

**Tasks/Methodology**

**Contract with an Experienced Consultant.**

The Napa County EMS Agency contracted with an EMS/Trauma consultant to assess the existing system and develop and describe an optimal EMS/Trauma System Plan for Napa County.

**Establishment of an EMS/Trauma Steering Committee.**

The Napa County Emergency Medical Care Committee (EMCC) was utilized as a source for individuals with expertise and familiarity with the Napa County EMS System and those selected individuals served as the EMS/Trauma Steering Committee. The

EMS/Trauma Plan was developed for Napa County following an analysis of the EMS delivery system. The consultant met with EMS Agency staff, prehospital provider agency staff and the EMS steering committee and several drafts were submitted to the EMS Agency and in turn distributed for review and comments to the EMS steering committee for their action. A final draft was approved and forwarded to the EMS Agency with a recommendation for adoption by the County.

**Determine a method of system evaluation and a mechanism for quality assurance.**

A Continuous Quality Improvement (CQI) committee was established through the EMCC to develop a County-wide CQI program. The CQI committee membership consisted of the various provider agencies and base hospitals. The CQI committee members established a set of core quality indicators, determined the responsibility for measuring the indicator, what the method of measurement was to be and what the standard of performance would be.

The CQI committee members developed a quarterly log sheet for reporting on each indicator as well as a CQI reporting sheet for reporting of the findings, % of threshold met and the action/target date for those percentages that "fell out" of the recommended standard.

This proposed program was forwarded to the EMS Agency which then proceeded to have it implemented.

**Outcomes/Conclusion**

The EMS/Trauma Project resulted in the development of an EMS/Trauma plan for Napa County which identified the overall EMS system priorities, directions and objective time frames.

The County-wide CQI program was implemented. To support the new plan and its programs a block grant special project for an automated data collection system was sought and secured for fiscal year 1997-98. The trauma registry which will be utilized is designed to link with the automated prehospital data collection and reporting system.

# Improving Rural EMS Reimbursement

**Grantee**
Northern California EMS Agency
**Project Number** EMS-4056
**Project Period** 06/25/95-06/25/96
**Project Amount** $39,938.00

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**Introduction**

The California Rural EMS Study (California EMSA, 1992) and many other sources have identified EMS as the health care "safety net" for many rural communities, while describing critical and worsening financial hardship among rural providers. Many rural providers are not effectively pursuing funding available to them by insurance coverage and other means.

**Project Description**

In an effort to offer improved financial and operational stability to rural EMS providers, this project studied and informed rural ambulance and first responder agencies regarding the methods and possible outcomes of three alternatives to obtain reimbursement from insurance companies for their expenses related to EMS response. These were:

1. To develop internal billing programs;
2. To contract with a commercial third party billing service, and;
3. To develop a billing service within the LEMSA.

The objectives were:

- To determine which services are preferred and will be utilized by rural EMS providers.
- To obtain the resources needed for the project.
- To orient providers to the benefits and alternative methods of insurance reimbursement.
- To implement program alternatives.
- To analyze program effects.

**Task/Methodology**

Reviews of a range of billing software programs were conducted, a resource list of EMS billing services in California compiled, and a billing service established as a service of Nor-Cal EMS, the LEMSA for northeastern California. Establishing the billing service involved the purchase of a computer, selection and purchase of specialized software, operator training, contract development, and solicitation of clients. Fifteen presentations describing the benefits and alternatives for reimbursement were conducted in each county of the region. 207 officers representing 137 agencies attended the meetings. Interest and participation proved very high.

**Outcomes**

Documents created include a provider survey, a short listing of EMS billing services in California, a 14-page handout on fire service EMS reimbursement, a contract for billing services, and related items. Although providers originally expressed interest in all three alternatives, the only one to receive serious interest was the LEMSA's billing service. At the time of this report, 16 agencies have requested additional information, meetings, or services in this regard. This information could prove beneficial both to provider agencies and EMS administrators.

**Conclusion**

Any alternative to improve awareness and pursuit of this underutilized funding alternative could prove tremendously beneficial to the rural EMS community and its constituents, especially with the emergence of managed care. EMS agencies offering billing services could find that they provide improved stability of funding both for their client agencies and themselves.

# Rural Ambulance Exclusive Operating Area (EOA)

**Grantee**
Northern California EMS Agency
**Project Number** EMS-4057
**Project Period** 06/25/95-12/31/96
**Project Amount** $55,000.00

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## Introduction

The unique needs of rural areas has placed a special burden on their EMS services, especially ambulance services, and the political jurisdictions that supervise them. Providing franchise protection for ambulance providers and their supervising government entities is available through establishing an exclusive operating area (EOA), however, the methods and tools for achieving an EOA are largely based on urban models. The State of California Emergency Medical Services Authority (EMSA) funded a special project for Nor-Cal EMS to investigate these issues and develop an appropriate rural ambulance EOA request for proposal. Nor-Cal EMS retained the services of an emergency medical services consulting firm that had significant experience regarding EOAs to assist them.

## Project Description

The goal of this project was to develop, implement and evaluate a rural ambulance EOA model. Specifically, the project developed a template document to be used by rural counties through out California in developing EOA plans and granting areas. In addition to the design of a template, a rural ambulance resource manual was also developed. The resource manual is a compendia of EOA documents in use by several rural California counties (for example, ordinances, agreements, press releases, etc.). The five objectives identified for this project are provided under the Tasks/Methodology section of this abstract.

## Tasks/Methodology

C To complete a needs assessment of six rural counties in the Nor-Cal EMS region on rural ambulance EOAs.

The Abaris Group conducted numerous meetings and interviews in order to conduct the needs assessment. Some of the organizations interviewed included: county health officers; Board of Supervisor sub-committees; EMS agencies; advisory committees; etc. Initially, the analysis centered around six rural counties in the Nor-Cal EMS region, however, it was determined that all rural counties in California should be reviewed. Towards that end, a survey was conducted of all rural county EMS agencies to determine who has an EOA in existence or is currently working on developing an EOA plan. In conjunction with the interviews and

meetings, exhaustive data analyses were completed.

C To prepare a template EOA model based on the needs assessment and state law.

Based on the needs assessment, a prototype EOA agreement, EOA county ordinance and a request for proposal (RFP) document were developed. The RFP document contains a format for response to a solicitation to bid. The components of the template RFP include the following: performance standards, response times, access and use of technology (i.e., CAD dispatching), monitoring standards, patient-care costs, uniformity/quality of service and, protection against default/financial failure.

C To design an evaluation methodology to study the impact of the rural EOA template.

The products produced as a result of this project include the following: EOA RFP template, EOA ordinance template, EOA contract/agreement template, EOA Resource Manual, EOA Rural County Survey, EOA sample documents from rural counties, Shasta and Siskiyou County reports.

C To implement two model rural EOA programs.

Two counties were identified to participate as pilot programs, Shasta and Siskiyou. Upon conducting the preliminary needs' assessment for these two counties, several issues became apparent. First and foremost is the fact that neither county did not want to pilot test a generic template. Both wanted an in-depth, county-specific analysis of their ambulance needs and issues conducted. Once that was completed, they would determine their level of participation. Nor-Cal EMS and The Abaris Group complied with their request and conducted a more detailed and specialized study for each county. In addition to the current assessment, detailed recommendations were also included.

C To coordinate the project and solicit input from appropriate local and state EMS agencies.

Nor-Cal EMS and the Abaris Group worked very closely together to ensure the objectives of this project were met. In addition, each EMS agency that has jurisdiction over a rural county was contacted and surveyed regarding their issues surrounding rural ambulance EOAs.

**Outcomes**

There are several results of the Rural Ambulance EOA project, the most significant of these being the development of an EOA template package that includes a detailed RFP to solicit EOA applications, an EOA ordinance and an EOA agreement. All three documents are templates, designed to be utilized by any rural county. In addition, the documents were drafted based on current state law.

The EOA project enabled Nor-Cal EMS and the Abaris Group to compile a

compendia of EOA related information and develop important documents necessary to implementing an EOA. In addition to the EOA documents that were developed and collected, a survey of all EMS agencies was conducted to determine the current EOA status of each rural county.

**Conclusion**

A thorough effort was made to develop an EOA template that would be "user friendly" to rural counties. Due to the complexities of state law and regulation, certain criteria are required that result in a more complicated RFP than most rural counties are comfortable with implementing. It is apparent from the hesitation of the two volunteer counties to not immediately initiate a pilot EOA project that the current EOA process may require a complete re-engineering. In fact, it is possible that the RFP process to implement an EOA in a rural county needs to be eliminated.

# Data Management Expansion

**Grantee**
Northern California EMS Agency
**Project Number** EMS-4058
**Project Period** 06/25/95-06/30/96
**Project Amount** $120,000.00

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## Introduction

Developed at North Coast EMS Agency in 1992, the California Prehospital Care Reporting & Database System's (PCR-DS) initial concept was to create a reliable database system that would be flexible and expandable enough to meet the dynamic changes of the emergency medical services system, in addition to functioning as an automated Prehospital Care Report (PCR) generator. Specifically, the data input, and simultaneous PCR output, is accomplished by EMTs and Paramedics using computers located in the hospital emergency departments, air and ground transport units, and provider base stations. With immediate access to the data, the Prehospital Liaison Nurses and ambulance managers can generate individual, group, or hospital-based reports. Regional data aggregation is accomplished via modem to a central computer (server) at the local EMS agency. The serious prehospital database deficiency in the Northern California EMS region prompted an investigation for a model EMS-MIS. This search led to the implementation of the PCR-DS.

## Project Description

In conjunction with the North Coast and Sonoma-Mendocino EMS agencies, Northern California Emergency Medical Services administered the Data Management Special Project from June 25, 1995, through June 24, 1996. The primary task of this cooperative project was to complete implementation of the Prehospital Care Reporting & Database System (PCR-DS) in the eleven counties that constitute the Northern California EMS (Nor-Cal) region, address the diverse needs of this multi-regional group, and to develop guidelines for continuous quality improvement (CQI) integration. The major goals of the project included:

1. To expand the California Prehospital Care Reporting & Database System PCR Reporting & Administrative Components into comprehensive and efficient element.
2. To incorporate a Certification, Education & Training Component into the California Prehospital Care Reporting & Database System.
3. To develop a State model Continuous Quality Improvement Component.

4. To pursue the Research & Development Component of the California Prehospital Care Reporting & Database System.

5. To coordinate an extensive data support network by implementation of a Statewide Data Support Component.

**Tasks/Methodology**

The key element to successful implementation of this project was diligent communication. Through constant communication between project personnel and prehospital care providers we were able to attain accurate needs assessments, develop a sense of partnership with the providers and obtain the necessary information to make effective program changes. Communication tools utilized included: 24 hour data hot-line for voice & fax; data newsletter, comment forms; ad-hoc query request forms; task force meetings; development of a Multi-Regional Task Force; incorporation into other many other meetings, such as manpower training, Trauma Advisory Committee, Medical Advisory Committee, EMCC, PLN, etc.; and, site-visits.

**Outcomes**

The efforts of this project have produced an information system capable of providing direction for day to day system operations, injury prevention, policy and protocol development, and program operations, among others. Aside from the improved prehospital care reporting, this extensive database provides meaningful reports beginning with the EMT level. This multi-tiered approach augments self, provider, hospital and EMS agency CQI efforts. Lastly, the Certification Module provides an avenue for the local EMS agency to track certification history, print pending expiration notification letters and issue certification cards.

**Conclusion**

Fully implemented in the Nor-Cal region this year, this innovative system represents a reliable and cost-efficient quality improvement tool. Advancements as a result of this expansion include certification and continuing education tracking, additional report generation, automated PCR audit interface and an intricate automated communication system. With full expansion into the Sonoma- Mendocino region and pilot testing in Riverside County, this unique management information system is expanding in its application as a model system.

# Regional Disaster Medical Health Coordinator (RDMHC)

**Grantee**
Northern California EMS Agency
**Project Number** EMS-4059
**Project Period** 06/25/95-06/25/96
**Project Amount** $30,000.00

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## Introduction

OES Mutual Aid Region III has only recently acquired an official Regional Disaster Medical Health Coordinator. Historically, the preparation for response to medical disasters among hospitals and prehospital personnel within the region has consisted of individual agency efforts without provision for general coordination of resources region-wide. Counties have approached the planning process without benefit of a single focal point for mustering medical aid resources from out of county or out of region. Nor-Cal EMS is developing the role and capabilities of the RDMHC for Region III as it relates to the roles of other key individuals at the county and state levels.

## Project Description

This projects goals were to insure continuity of RDMHC procedures with established standards and to maintain a working relationship with regional and county OES representatives. Maintaining and updating listings of key personnel to support activation of medical mutual aid in Region III was an important objective. It was also important to assess the readiness of the regional auxiliary communications resources to ensure compatibility of regional planning and response with SEMS guidelines.

## Tasks/Methodology

OBJECTIVE 1

To ensure continuity of RDMHC procedures with established standards.

The process for realizing this objective was to include formation of ultimate position checklists for events within and outside the region consistent with the statewide task force guidelines. Pending completion of the statewide guidelines, interim checklists have been placed and will be updated as necessary. The draft State of California Disaster/Medical Cooperative Agreement was revised several times and presented for review to representatives from various counties within region III. Consensus was not obtained, so agreements from another region were distributed and are under consideration for adoption.

OBJECTIVE 2

To maintain a working relationship with

regional and county OES representatives.

A very good working relationship between Nor-Cal EMS and OES representatives at the county, regional and state levels has been established and maintained. This has included the participation by the RDMHC Alternate in the MARAC and LEPC with subcommittee attendance and project participation. Agendas and minutes from each regional Manpower Training Committee meeting have been provided to the regional OES coordinator for attendance and participation ad lib.

OBJECTIVE 3

To maintain and update listing of key personnel to support activation of medical mutual aid in Region III.

It's generally recognized that communication capability is probably the most vital component in any disaster response, drill or preparatory exercise. Experiences in Region III would support this concept and, appropriately, the medical/disaster communications plan is fairly comprehensive and has been updated four times within this project period. This contains listings for state, regional and county agencies/personnel and includes phones/faxes and, where available, 24 hour contact points. This plan was distributed to regional OES and to requesting operational area OES.

OBJECTIVE 4

To assess the readiness of the regional auxiliary communication resources.

Evaluation so far indicates that potential capability exists for secondary, volunteer radio networking capabilities. There is so much to be done, however, before this will be a reliable region-wide system. The regional RACES coordinator must, of necessity, play a major role in the development of this resource. Major health problems have, unfortunately, precluded his participation for much of this past year.

OBJECTIVE 5

To ensure compatibility of regional planning and response with SEMS guidelines.

To help medical and health providers learn and assimilate the SEMS guidelines, Nor-Cal EMS arranged, through CSTI, for each health department and hospital in Region III to receive the information on computer disk. Receipt of the guidelines on disk by each county OES office was verified. Additionally, each hospital in the region has been supplied with the updated HEICS files on computer disk. The RDMHC and Alternate have received training in the SEMS Executive and EOC courses.

**Outcomes**

The working relationship between the RDMHC, Alternate RDMHC and OES officials at the county, regional and state level have continued to evolve and mature. Regular attendance at meetings and shared participation in committees, while time-

consuming, has enhanced the lines of communication in several sectors and added a personal dimension to previously tentative professional relationships.

Critical contact information for agencies and positions at local, county, regional and state levels has been updated and continues to provide a comprehensive resource. This communications plan spans the various disciplines in the private and public sectors and provides office numbers, fax numbers, pager numbers, certain radio frequencies and available home phone numbers. In practical terms, this is a pivotal instrument for any process of planning, exercise or participation.

Medical personnel, as well as the RDMHC and Alternate, are better prepared to participate with disciplines from the public sector in planning and response activities in a manner marked more by harmony than by discord. Familiarization with SEMS and, in hospitals, with HEICS, paves the way for more coordinated interdisciplinary action and an ultimately more effective response. While the education process is not complete, the effort is well along and will continue.

**Conclusion**

All areas of this ongoing project are evolving in a positive way. Improved lines of communication have been established with key personnel at the county level. There have also been substantial gains in the education of county and hospital personnel in the area of SEMS and HEICS respectively.

# Freestanding Emergency Department Design

**Grantee**
Northern California EMS Agency
**Project Number** EMS-4060
**Project Period** 06/25/95-06/30/96
**Project Amount** $34,000.00

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## Introduction

In Rural California distance, terrain and weather create the long ambulance response times and return trip to the rural hospitals. Fifteen minutes to more than one hour are common in the Nor-Cal EMS region. Those times will be greatly increased with the demise of the smaller hospitals which are being forced to close for fiscal reasons.

Recently Corning Hospital of Tehema County has failed and the tenuous nature of a few of our local rural hospitals, all with 10 or less acute care beds, are cause for concern. The look of the future for our rural facilities is toward downsizing for economic reasons while attempting to provide a minimum standard of care, especially emergency care.

If these facilities are forced to downsize to clinic or other status, an additional barrier to quality care is created. Reimbursement becomes nearly impossible. Example: (Pt. C/O chest pain, family calls 911, ambulance responds.) If the ambulance transports to the hospital that has downsized to a clinic, the provider does not qualify for reimbursement. Ambulance transports are not covered if the transport is not to a licensed hospital emergency department. Emergency reimbursement is only recognized in a hospital or prehospital environment. We must find a solution to this problem. We are convinced that a medically acceptable, quality alternative can exist, and we would like to create that model proactively, rather than in the wake of a disaster.

## Project Description

This project proposed to form a task force, comprised of individuals from Nor-Cal EMS, Northern Sierra Hospital Conference, CA EMSA, CA Office of Statewide Health Planning and CA DHS Licensing. Nor-Cal EMS would be the lead agency. The objectives of this task force would be to:

1. Research and Design an acceptable model of a free standing Emergency Department.

2. Research funding and reimbursement sources to insure viability of this entity.

3. Restructure Licensing regulations to allow for such a facility under certain circumstances, such as rural location and lack of hospital resource in area,

or possible affiliation with a receiving hospital to be eligible for reimbursement

**Tasks/Methodology**

The Task Force was created and conducted at least monthly meetings, researching similar models of creative downsizing and provision of local emergency medical care. A consultant was brought into the Task Force to perform "paper modeling" of four rural hospitals to confirm or reject the concept pertaining to the fiscal viability of such a model. We also reviewed DHS Licensing categories and special projects such as the "ARM" to understand what the regulatory limitations and options were.

**Outcomes**

A summary paper entitled "A Limited-Service Rural Hospital Design Analysis: The Rural Freestanding Emergency Department Model" was created as a product of the project and has been submitted to the California EMS Authority. In addition, the summary paper was submitted for publishing by Sharon Avery, Executive Director of the Rural Healthcare Center (CAHHS) and a Task Force member to a few national professional periodicals whose target market includes hospital administrators. Those submissions are in the process of review at this time.

**Conclusion**

As described in the summary paper the conclusions drawn by the task force identified the fact that while the project model is an important public health issue it is not found to be the panacea of EMS that was expected prior to the commencement of the project. Those counties considering hospital downsizing to maintain at least emergency care have some homework to do and barriers to circumvent. It is the hope of the project task force that our work has provided a clear pathway and brought to the surface the important issues in considering to downsize from a full acute care hospital to a freestanding emergency department.

# Emergency Medical Dispatch

**Grantee**
North Coast EMS Agency
**Project Number** EMS-4061
**Project Period** 06/25/95-06/30/97
**Project Amount** $40,000.00

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Project still open.

# Rural and Urban Trauma Patient Care

**Grantee**
North Coast EMS Agency
**Project Number** EMS-4062
**Project Period** 06/25/95-04/01/97
**Project Amount** $28,000.00

**EMS Administrator**
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The Final Report and Abstract Report are due 06/01/97.

# Pediatric Injury Prevention

**Grantee**
Riverside County EMS Agency
**Project Number** EMS-4063
**Project Period** 06/25/95-12/31/96
**Project Amount** $50,000.00

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## Introduction

During the 1980s, Riverside County experienced one of the nation's largest population growths. Approximately 1.2 million people currently reside in the county, of which 24.6% (approximately 288,000) are children between the ages of 0-14 years.

Injuries (intentional and non-intentional) have replaced infectious diseases as the leading cause of death for children between the ages of O-14 years. The economic impact of injuries on society is enormous. Injuries drain not only public resources, but often devastate families both financially and emotionally.

Most injuries occur from either lack of knowledge, or from a lack of applying knowledge to change specific behavior. Statistics prove for every dollar spent on health and injury prevention education, the return in savings to society is two to three fold in terms of dollars and lives saved.

## Project Description

In 1995 the Riverside County EMS Agency visualized an opportunity to reduce the number and severity of childhood injuries through the development of a comprehensive pediatric/childhood injury prevention program. This commitment included the development and integration of an Emergency Medical Services for Children (EMSC) subsystem within its EMS system as well as a pediatric injury prevention program.

To accomplish this goal several major objectives were identified; hire a project coordinator for overall responsibilities for project implementation, review existing pediatric data bases to identify age groups and locations at risk, select appropriate injury prevention programs to pilot, select appropriate school sites to conduct pilot programs, contact appropriate community agencies to participate as instructors for programs, train all instructional staff regarding specific program learning objectives, conduct educational safety programs and evaluate the effectiveness of each program.

The purpose of this project was to implement safety programs within school curriculums that specifically addressed current community educational needs. Utilizing local community resources as instructors (e.g. police officers, firefighters, paramedics and

nurses) would also provide an opportunity for children to interact positively with a variety of career options. Both programs offered an opportunity for children in various developmental stages to experience multiple positive role models as they received vital safety information. By using these positive role models, we were able to incorporate methods of behavior modification while simultaneously increasing public awareness on specific types of injuries.

**Tasks/Methodology**

The purpose of the project was to select and pilot injury prevention programs throughout Riverside County. San Diego Fire Department's Walking Safe for second grade students and Alpine, Mother Lode, San Joaquin EMS Agency's Project S.A.F.E (Student Activities for Emergencies) for junior and high school age students were selected.

The cities of Corona, Indio and Riverside piloted Walking Safe. School superintendents selected school sites based on pedestrian injury patterns or risks. Police and fire departments agreed to be program instructors. The Walking Safe curriculum was reviewed and modified to accommodate resources. All volunteer instructors attended a Walking Safe training class. Project S.A.F.E. was piloted in the cities of Palm Springs and Corona. Multiple local and regional agencies participated as instructors.

**Outcome**

A pedestrian safety program was developed and piloted successfully. The program was taught collaboratively by local fire and police departments. Approximately 2,500 students and their parents received instruction and work books to reinforce the information presented. Project S.A.F.E. was successfully piloted at a middle school (seventh grade) and high school (tenth grade). Participants in Project S.A.F.E. represented both public and private community organizations. Approximately 900 students participated in Project S.A.F.E. Each received a variety of safety related information in a challenging and unique format. Each program received positive evaluations from teachers, program instructors/participants, students and parents.

**Conclusion**

Riverside County EMS Agency established a pediatric injury prevention program for its community's. Participants in the safety programs piloted are supportive and eagerly anticipating or planning permanent implementation within their student activities.

# First Responder to EMT-I "Bridge" Training

**Grantee**
Riverside County EMS Agency
**Project Number** EMS-4064
**Project Period** 06/25/95-09/30/96
**Project Amount** $35,000.00

**EMS Administrator**
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## Introduction

In July 1995 Riverside County Emergency Medical Services Agency received a grant to research, develop, and implement a Bridge Program transitioning from California Department of Forestry First Responder status to Emergency Medical Technician certification. Riverside county is the second largest county in the state in area, extending nearly 200 miles east to west and encompasses over 7,000 square miles. The majority of this area is wilderness and rural. While there are several population centers interspersed throughout the county, most of these urban areas are serviced by municipal fire departments. It is the responsibility of Riverside County Fire/California Department of Forestry (RCF/CDF) to respond to medical emergencies in the unincorporated and remote areas, providing the primary medical response unit for these districts.

## Project Description

The first part of the grant was spent determining program content differences, studing other Bridge-type programs, and developing a curriculum for the Bridge program. An integral part of this grant was to identify the curricular differences between the First Responder training program and EMT-I training program. Program differences were identified and were evaluated to determine what basic first responder theory and skills need to be reviewed as a baseline upon which to build the expanded EMT-I training. A comprehensive assessment process was completed which was incorporated into the development of the Bridge student's knowledge and skills. The Bridge program was developed and the training program was implemented.

## Tasks/Methodology

An Advisory committee was formed and meetings were held to accomplish several objectives. Bridge program differences were outlined, curriculum was reviewed, assessment data was evaluated, and the committee approved the content and logistics of the training program.

The course was taught as it was approved and all grant objectives were met. Assessment data showed that a comprehensive review of First Responder level knowledge was not necessary as inclusion into the Bridge content. A representative sample of RCF/CDF

personnel were successful in completing the Bridge program, and data was collected from both the control and experimental groups for comparison.

**Outcomes**

A comparison was made of Bridge-type programs and the strengths of these programs were incorporated into this project. A thorough assessment was completed to establish an appropriate baseline level of knowledge. Optimal scheduling was arranged in conjunction with adult learning strategies, retention capacity, facility and instructor availability, and student work constraints. The training program was completed as outlined and all grant objectives were met. The data collected showed that the knowledge acquired at the First Responder level was integrated with EMT level practice, that the Bridge students score better than traditionally trained students in the assessment test, and that the basis for a credible evaluation was established for the second year grant.

The evaluation parameters were outlined for the second year of the grant to anticipate a maximum of student involvement. Data was collected and analyzed to facilitate the evaluation of course validity and feasibility.

**Conclusion**

In summary, the overall success of the Bridge program can be measured by several factors: An appropriate curriculum was developed that was feasible and cost effective to implement, and student evaluation forms showed a favorable response to the curriculum, scheduling, and format of the program. With the ultimate goal being provide the best possible prehospital medical care to the citizens of Riverside County, the impact of the program of this type is invaluable. Raising the entry level practice of these personnel to EMT-I, will improve the quality of health care through higher standards of training and knowledge.

# Emergency Medical Services for Children (EMSC)

**Grantee**
Riverside County EMS Agency
**Project Number** EMS-4065
**Project Period** 06/25/95-12/31/96
**Project Amount** $65,000.00

**EMS Administrator**
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## Introduction

In 1994 the Riverside County EMS Agency identified multiple conditions within the prehospital and hospital settings indicating a need to develop and integrate a comprehensive Emergency Medical Services for Children (EMSC) subsystem into its existing EMS system.

During the 1980s, Riverside County experienced one of the nation's largest population growths. Riverside County's enormous (approximately 7,310 square miles) geographical area is comprised predominantly of wilderness and rural expanses. Approximately 1.2 million people reside in the county, of which 24.6% (approximately 288,000) are children between the ages of 0-14 years.

## Project Description

The purpose of the project was to develop a set of guidelines that would establish appropriate quality assurance for the critically ill or injured child throughout the continuum of care. This included the development of mechanisms for access and/or transfer to centers that provide specialized pediatric services.

To accomplish this goal several major objectives were identified; the establishment of a broad-based community advisory committee, on-going identification of political, technological, legal or financial barriers, develop and implement specific prehospital pediatric field treatment protocols and educational guidelines and to evaluate each receiving hospital's emergency department pediatric capabilities.

## Tasks/Methodology

An active Advisory Committee and three Task Forces were established. Each committee had specific grant objectives assigned to accomplish. The California State EMSC Final Report was utilized as the primary reference for all guideline development. Each Task Force presented all recommendations for review and comment to Advisory Committee. All Advisory Committee final draft documents were distributed to the appropriate EMS Agency committee for review, comment and approval.

**Outcome**

Several documents were finalized and approved for implementation county-wide; Guideline for the Care of Pediatric Patients in the Emergency Department, Guidelines for Interfacility Pediatric Tertiary Care Consultation and/or Transfer, Guidelines for Pediatric Interfacility Transport Programs, Emergency Department Consultation Survey Tool, twenty-six Pediatric Field Treatment Protocols (series 8000) and revised BLS/ALS equipment and supplies lists. Currently, the development of a comprehensive prehospital pediatric educational curriculum is in progress.

A large pool of Advisory Committee members received training as "ED Site Consultants". Nine Consultative Surveys were completed during the project period (7/1/95-12/31/96). Hospitals surveyed and ED Site Consultants expressed appreciation for the unique experience and opportunity to become better knowledgeable, equipped and organized to meet the needs of their critically ill and injured pediatric patients. The six remaining receiving hospitals serving Riverside County's population will receive a consultative visit by the end of June 1997.

**Conclusion**

The Riverside County EMS Agency EMSC Project made significant progress in improving pediatric EMS, emergency and critical care guidelines within its system. The EMSC Advisory Committee continues to be a diverse and active proponent for further implementation of the EMSC Project. The EMSC Advisory Committee is a driving force behind innovative and creative ideas in which to expand and utilize the context of the EMSC Project.

Many benefits were actualized during the first year of the EMSC Project. A true "spirit of cooperation" developed between all providers of pediatric emergency medical services. This newly created network communicates effectively and addresses collaboratively pediatric issues. Most importantly the children of Riverside County are benefiting by the improved quality of service achieved through the higher standards for pediatric training and services.

# EMS Data System

**Grantee**
Riverside County EMS Agency
**Project Number** EMS-5017
**Project Period** 09/01/95-08/31/96
**Project Amount** $50,000.00

**EMS Administrator**
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## Introduction

In September 1995 Riverside County EMS Agency received a grant to fund the implementation of an automated EMS data system. Monitoring the performance compliance of multiple agencies requires an effective and comprehensive means of data collection and reporting. The Riverside County EMS Agency currently does not have the facilities or the data processing capability to monitor the performance of the various EMS system providers. This grant was used to evaluate the existing data systems in Riverside County, recommend a central site for a collection system and recommend modifications of the existing programs to design a county wide data collection system. The development of a comprehensive data management system will support quality improvement and monitoring activities of the EMS Agency. The system must be compatible with the EMS providers and hospitals existing data systems. A common data set for the transportation providers, receiving hospitals, base hospitals, dispatch centers and trauma center has to be established to generate outcome studies and to monitor the EMS system performance. An overall customized data system will be designed to facilitate the timely release of information in compliance with State guidelines and contractual requirements.

## Project Description

The first year grant was used to form a EMS Data Task Force and set the goals of the Task Force, conduct on-site visits to all Riverside County providers, identify critical components necessary for successful integration of an EMS Data System and select the most compatible cost effective, data system that meets all or the majority of Riverside County's needs.

## Objectives

A Data Task Force was formed and meetings were held to obtain a general chain of events that the EMS data system would track. The task force determined an outline of criteria that the data system would meet based on State guidelines. The task force also determined "data system traits" that the data system would meet based on provider needs. A "data tool" was established and approved to be used to visit other EMS data systems within the county. These systems were reviewed and evaluated and with the approval of the task

force the suggested system was selected.

**Outcome**

San Diego EMS - The hospitals in San Diego County are set up with a computer using a database program written by San Diego EMS. San Diego County is only collecting data from the hospitals.

Alpine Mother Lode - The local EMS agency inputs all data. Each agency does provide the PCR information. Mother Lode provides the training to the providers. Based on the amount of counties that have adopted this system and the States confirmation of data being submitted on a quarterly basis overall success was very high.

Nor-Cal EMS Database System - Nor-Cal EMS does not charge for the program. The patient care report system was easy to use, maintains the same integrity that the run form provides. The report process was very simple and reports were all identified for easy selection and generation. The Nor-Cal EMS database system took two hours to setup and train. The system is very easy to use. The training is hands on for two hours. Overall success based on the number of counties using the system and the State EMS Authority confirming reports being submitted.

**Conclusion**

The Data Task Force and the Program Coordinator concluded that to meet the data set for the State as well as for Quality Improvement, and outcome data for the patients of Riverside county a comprehensive data system maintained by the EMS agency would need to be implemented. Each hospital needs to be set up with an adequate number of computers for input of the patient care report by the paramedics. Each hospital will need an adequate printer for output of patient care report (run form) and summary reports. Each hospital will need a designated area for paramedics to input the patient care report. It was further recommended that a fund be set up to disperse monies collected from the providers to maintain the system after the first year and for an Information Services Specialist to be placed within the EMS Agency to maintain the support and services of the computers. The Information Services Specialist would also be in charge of the collection of data, maintaining the systems and in submitting data to the State.

# Regional Disaster Medica Health Coordination (RDMHC)

**Grantee**
San Bernardino County EMS Agency
**Project Number** EMS-4066
**Project Period** 06/25/95-06/25/96
**Project Amount** $80,000.00

**EMS Administrator**
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## Introduction

Management of mutual aid continues to be a viable means of minimizing the effects of disasters on neighboring populations. Prior to 1987, San Bernardino County has had some plans in place to request assistance. Recently this project was sponsored to expand the scope of services and providers and to develop agreements between the counties to provide mutual aid. Region VI consists of the six counties of Imperial, Inyo, Mono, Riverside, San Bernardino and San Diego.

## Project Description

The project was designed to improve communication between counties and to standardize their general management system. Counties now meet regularly as needed to learn the language of the medical and health disciplines. The standardization of emergency management techniques and strategies is required by California Law. The Standardized Emergency Management System (SEMS) is the method chosen to institute these standardizing principles.

The six major objectives designed to implement the above general principles are:

1. Continue development of formal intercounty medical/health relationships, within Region VI.
2. Develop and formalize relationships with adjacent counties, outside of Region VI.
3. Develop and implement a disaster medical/health plan.
4. Further develop the intercounty medical health communication system.
5. Review and revise as needed the published plan specifying obligations of signatory agencies.
6. Provide training on the program known as the Standardized Emergency Management System (SEMS).

## Tasks/Methodology

The above were addressed through a tasking management system. The Region VI RDMHC and staff communicated between the OADMHCs and their staff the goals and objectives. Within the various counties the OADMHC staff are the ones who provided the contacts, did the work and secured the approvals or concurrences necessary to comply with the Regional objectives. Communications for ordinary business was conducted by telephone, letter and facsimile.

**Outcome**

Six months after the close of this fiscal year project the emergency management which should be in place is SEMS. During this project the training for the transition to SEMS was conducted. We continue to work on a mutual aid agreement between the Region I and VI member counties. By the end of the project the agreement draft had been approved in principle. We are updating the Region VI operations plans and procedures.

The Region VI radio system was tested routinely and steps were taken to see if and how other counties could obtain access to the system, thereby increasing the number of participating county Health Officers who could communicate during a disaster.

A draft mutual aid agreement amongst the Environmental Health Officers (EHOs) was produced. It was acted upon as the EHOs during a disaster are directed by the Health Officers.

A draft mutual aid agreement amongst the Vector control Districts is being circulated for signatures.

**Conclusion**

There are several conclusions which are evident. Generally this project has allowed the eleven southern California counties to produce a useful mutual aid disaster medical/health agreement. In the process of developing the agreement the counties have developed relationships which are useful on several levels.

This project allows for the exercising of agreements. Exercising is essential to the demonstration of a project's usefulness. We often find that an unexercised plan is non-functional during a time of need. Part of the need for exercising is seen in the turnover of staff at all levels of county and private medical management.

The project is essential in that it allows full-time personnel to work on the development of the nine specific objectives. The six summarized goals/objectives are part of a systematic plan to standardized and strengthen mutual aid response among southern California Counties.

# Disaster Medical Assistance Team (DMAT)

**Grantee**
San Bernardino County EMS Agency
**Project Number** EMS-5018
**Project Period** 09/01/95-06/30/97
**Project Amount** $30,000.00

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Project still open.

# Pediatric Education for Paramedics (PEP)

**Grantee**
San Francisco County EMS Agency
**Project Number** EMS-4067
**Project Period** 06/25/95-06/25/97
**Project Amount** $77,000.00

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Project still open.

# Regional Disaster Medical Health Coordinator (RDMHC)

**Grantee**
San Joaquin County EMS Agency
**Project Number** EMS-4068
**Project Period** 06/25/95-06/30/96
**Project Amount** $30,000.00

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The EMS Authority did not receive the Final Report or Abstract Report.

# Emergency Medical Services For Children (EMSC)

**Grantee**
San Joaquin County EMS Agency
**Project Number** EMS-5019
**Project Period** 09/01/95-08/31/96
**Project Amount** $50,000.00

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## Introduction

Beginning in late 1994 and continuing during 1995 the San Joaquin EMS Agency staff began to notice an increasing number of pediatric patients within our EMS system. This corresponded to an increasing population within the county. Staff further noticed the need to improve care providers awareness of the differences between pediatric and adult patients. Discussion with the Alpine, Mother-Lode EMS agency and their implementation of an EMS-C system as well as attendance at educational conferences with focus on EMS-C prompted this agency to begin to implement a quality improvement plan.

## Project Description

The purpose of the project was to assure that appropriate emergency and critical care services are available to meet the special needs of critically ill and injured children throughout a continuum of care from first detection of illness or injury to definitive care in specialized pediatric centers when this is needed.

The major objectives included the creation of an EMS-C advisory committee with a broad base of care providers from within the county, the gathering and review of data related to pediatric emergency cases within our system as well as comparing information with other counties in the state, the developing of information gathering mechanisms including injury and illness prevention materials, and reviewing and revising guidelines for both prehospital and emergency department care.

## Tasks/Methodology

The advisory committee was formed and its members reviewed and revised the prehospital, emergency department and interfacility transfer guidelines. Following the approval of the Emergency Department Guidelines, the Agency began Emergency Department consultation visits with the help of consultants from a Pediatric Critical Care Center. The Agency began to gather injury and illness prevention materials.

## Outcomes

The guidelines for emergency departments and interfacility transfers were presented to appropriate EMS committees within the county and adopted. These

documents have been widely disseminated and the hospital visits were geared to meeting these guidelines. The hospitals visited expressed appreciation for the visits and the assistance and encouragement in becoming better organized for their pediatric patients. The injury and illness materials gathered continue to be forwarded to health care providers. These providers will use these materials to help educate those they serve and in community outreach programs. The committee method of developing guidelines, gathering statistics and participation has made this a community based project and has been well supported. Consequently, the Agency has benefitted from community acceptance and willingness to improve.

**Conclusion**

The San Joaquin EMS Agency has enjoyed a very successful year improving its EMS-C system. The project has moved rapidly, but effectively through some of the elements of the EMS system: prehospital care, emergency department, and interfacility transfer. The EMS community is more aware of the needs of pediatric patients and is doing much to improve itself through training and organization.

# Emergency Medical Dispatch (EMD)

**Grantee**
San Luis Obispo County EMS Agency
**Project Number** EMS-5016
**Project Period** 09/01/95-03/31/97
**Project Amount** $65,000.00

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The Final Report and Abstract Report are due 05/31/97.

# Trauma System

**Grantee**
Santa Barbara County EMS Agency
**Project Number** EMS-4069
**Project Period** 06/25/95-12/31/96
**Project Amount** $36,000.00

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The EMS Authority did not receive the Final Report or Abstract Report.

# Emergency Medical Services for Children (EMSC)

**Grantee**
Santa Clara County EMS Agency

**Project Number** EMS-4070

**Project Period** 06/25/95-12/31/96

**Project Amount** $90,000.00

**EMS Administrator**
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The EMS Authority did not receive the Final Report or Abstract Report.

# Prehospital Care Report Data System

**Grantee**
Santa Clara County EMS Agency
**Project Number** EMS-4071
**Project Period** 06/25/95-06/30/97
**Project Amount** $65,000.00

**EMS Administrator**
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The Final Report and Abstract Report are due 08/31/97.

# Emergency Medical Dispatch (EMD)

**Grantee**
Santa Clara County EMS Agency
**Project Number** EMS-4072
**Project Period** 06/25/95-09/30/96
**Project Amount** $65,000.00

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The EMS Authority did not receive Final Report or Abstract Report.

# EMS System Design

**Grantee**
Solano County EMS Agency
**Project Number** EMS-4073
**Project Period** 06/25/95-06/30/96
**Project Amount** $31,000.00

**EMS Administrator**
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**Introduction**

Emergency Medical Services (EMS) Systems have developed rapidly and aggressively since the passage of the EMS Act in 1981. The emergence of these systems has led to a significant and measurable decrease in the mortality and morbidity of persons within California suffering from injury and/or disease. However, this system development has produced inherent drawbacks including:

1. A maximal response to minimal stimuli;
2. A system oriented to exclusion of providers rather than inclusion;
3. A development scheme which has largely ignored the question of cost vs. outcome;
4. A fee-for-service model inconsistent with current trends to capitation; and,
5. A frequent duplication of services while failing to maximize public resources including dispatch service, first responders, etc.

These problems are further exacerbated by the inherently complex arrangement of interdependent agencies and interests which collectively produce emergency medical services.

A legitimate solution resulting in the provision of cost-effective prehospital care must be grounded in the recognition and coordination of multiple interests. This objective is attainable by organizing the EMS System and associated services after a model known as a Cooperative[1], wherein the providers of the many and various EMS services collectively coordinate and wholesale these products to health care payors. This structure provides the advantages of economies of scale, total service availability, fiscal accountability, and system-wide coordination and cooperation. The mission of the Cooperative will be to cooperatively coordinate the delivery of services in a manner that makes the services better.

The Cooperative will be geared towards provision of a comprehensive range of services including, but not limited to, BLS First Response, ALS First Response, EMT-

[1]A cooperative is a group of independently owned and managed businesses and/or public agencies that contractually agree to abide by a set of governing rules developed by the membership (themselves) for the purpose of engaging in some economic activity.

Defibrillation/Intubation, Priority Medical Dispatch, Patient Repatriation, etc. These “Parahospital" services will be provided in a flexible fashion designed to meet the needs of both the public and the payors. This could include transport to In-Plan Facilities or approved destinations alternative to emergency departments; In-Field Treat and Release of Patients; procedures for Physician Referral; implementation of Preventive Health programs, etc. These services are "Value Added" (i.e., they save the health plans money in outside claims while providing appropriate services).

**Project Description**

The focus of this project was to reorganize the Solano County EMS System to be both compatible with the needs of payors as well as to provide appropriate medical services to all persons accessing the 911 system. Inherent in this objective was a re-evaluation of the scope and role of the various elements of an EMS System and the assignment of a “value-added" weighting to the various services provided (or potentially provided). Also inherent was the formal recognition of the role payors should play in system design. This project involved the creation of a new services delivery model, known as the Parahospital Services model, as well as a new organizational model, the Solano Emergency Medical Services Cooperative (SEMSC), which is the first EMS Agency in California to exist as a single county joint powers authority.

**Tasks/Methodology**

The first task of this project called for the development of a Payor-Consortium with whom the county EMS Agency would work in the development of the system. This was subsequently changed to the creation of a Joint Powers Authority (the SEMSC) between the County, six of the seven cities within the county, and the fire districts in the unincorporated areas of the county. This JPA was then designated by the Solano County Board of Supervisors as the EMS Agency for Solano. Two payors, Kaiser Foundation Health and the Solano Partnership (a Medi-Cal HMO), representing nearly 70% of the insured lives within the county, became the principal payors with whom the SEMSC will contract.

The second principle task was the development of a Request For Proposals (RFP) for a provider of Parahospital Services. The RFP had three functions:

l. Identify a suitable provider;
2. Identify value-added elements of an EMS system; and,
3. Provide the basis for development of a fiscal model.

The RFP is a "blueprint" for the entire system and as such will deal with the issues of the role of first responders, reimbursement of quality assurance functions, role of base hospitals, etc.

The third principle task of the project was the implementation of a Priority Medical Dispatch (PMD) program to provide

appropriate initial triaging of 911 requests and dispatch of resources. This PMD program would include a managed care component.

**Outcomes**

The JPA was organized, a PMD program with managed care protocols has been selected, and an RFP should be finalized within several months. The political will to implement the program at that time is undetermined.

**Conclusion**

This project is still under development. A cooperative model parahospital system is still possible if not likely.

# Public Information and Education

**Grantee**
Solano County EMS Agency
**Project Number** EMS-4074
**Project Period** 06/25/95-12/31/96
**Project Amount** $30,000.00

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## Introduction

Nearly 50% of pediatric patients transported by ambulance in Solano County have trauma-based etiologies. Of this group, auto/truck accidents, pedestrian/bicycle events, and falls account for the majority of trauma etiologies. Data would suggest that these etiologies may have a significant behavioral component, which, through a program of public education in injury prevention, may be adequately addressed so as to produce a measurable decrease in the frequency of serious injury.

## Project Description

The focus of this project is to identify pediatric populations at risk for major traumatic injury and to develop community based education strategies for reducing and eliminating such events. These efforts will compliment the EMS-Children program which the Solano County EMS Agency successfully implemented in 1993-1994 with the assistance of State block grant funds.

## Tasks/Methodology

The first step in this project was to perform a detailed analysis of the current EMS-MIS of pediatric traumatic events. From this etiologies could be verified and target populations constructed. This information would then be used to determine what existing Safety and Public Information program(s) would be most appropriate to meet the needs of these populations. These programs would then be implemented locally with the assistance of agencies, organizations and other resources interested in participating in this project.

## Outcomes

Because of insurmountable technological difficulties with the EMS-MIS data system, the detailed analysis for etiologies and population targets was unattainable. Therefore, a generic strategy was adopted and the Project S.A.F.E. program and SAFE Moves presentation we held at local schools with enthusiastic reception. The data describing the impact of these programs, if any, are not yet available.

# Regional Development

**Grantee**
Sonoma/Mendocino EMS Agency
**Project Number** EMS-4075
**Project Period** 06/25/95-06/30/96
**Project Amount** $150,000.00

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## Introduction

Historically, Sonoma and Mendocino developed their own respective EMS systems independent of the other with the exception of a strong peer support relationship which existed between the EMS Coordinators of each county. The resignation of the Mendocino EMS Coordinator in 1993 lead to discussions between the two counties regarding the potential for Sonoma County to provide EMS Agency services to Mendocino. Those discussions resulted a contractual relationship between Sonoma and Mendocino which was initiated in January 1994. As a result of this contractual multi-county EMS system relationship, both counties expressed an interest in exploring the benefits of formalizing the regional EMS agency and pursuing outside funding to assist in developing this regional system. The assistance of Federal Block Grant funds through the State EMS Authority aids the Sonoma/Mendocino EMS Agency in fulfilling the essential functions as an EMS Agency for this multi-county EMS system.

This report is the final project abstract report for the Sonoma/Mendocino Regional EMS System Development Project for FY 1995-96. Many of the objectives associated with this project were designed to be implemented over a period of 6-36 months.

## Project Description

This regional EMS system development project was designed to focus on the major components of an EMS system as set forth in the State EMS System Standards and Guidelines. Initial EMS Agency activities were directed towards establishing the relationship between Sonoma and Mendocino Counties which is the foundation for this multi-county EMS system. The project established 7 major objectives.

- To improve system organization and management in the region.
- To increase and improve personnel and training.
- To improve communications systems in the region.
- To improve disaster medical preparedness in the region.
- To improve transportation and performance in the region.
- To improve public information and education in the region.
- To improve the assessment of hospitals

and specialty care centers in the region.

**Tasks/Methodology**

Specific tasks were designed within the general objectives to accomplish the desired result. Major tasks included:

- C Maintaining staffing of all allocated positions. (Achieved)
- C Maintaining contractual relationship between Sonoma and Mendocino Counties. (Achieved)
- C Revision of EMS plans. (Not achieved/Deferred)
- C Review and revise local policies to ensure compliance with state regulations. (Achieved)
- C Implement QI programs and continue working to upgrade Mendocino County providers to the paramedic level. (Achieved)
- C Pursuing improvements in the region's communications system. (Partially achieved)
- C Standardizing and integrating ICS/SEMS based MCI/disaster plans for the region and maintaining disaster preparedness/response capabilities. (Achieved)
- C Developing/maintaining provider agreements (Achieved-see final project report)
- C Review EMS aircraft utilization policies. (Partially achieved)
- C Improve public awareness of EMS. (Achieved)
- C Explore need for other additional specialty care center, e.g. trauma center (Targeted for another special project grant proposal)

**Outcome**

As noted above, many of the objectives were proposed to be implemented over a period which extended beyond the contract period associated with this project. Consequently, many, although not all of the specific objectives were completed during this funding period. Detailed information regarding this project and associated objectives/tasks, methodology and implementation schedule is contained within the quarterly report documents and final project report.

**Conclusion**

It is quite clear that the Sonoma/Mendocino EMS system has received and will continue to realize many positive benefits from the activities associated with this project. It is anticipated that continued funding of this project will result in completion of not only the objectives established within this project proposal, but those of future project funding periods.

Questions regarding this regional EMS system development project may be directed to Kent Coxon, EMS Administrator, Sonoma/Mendocino EMS Agency, (7O7) 525-6501.

# Data Collection, Information and Quality Improvement

**Grantee**
Ventura County EMS Agency
**Project Number** EMS-4076
**Project Period** 06/25/95-06/25/96
**Project Amount** $77,565

**EMS Administrator**
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## Introduction

Ventura County EMS identified a need for automated data entry in order to obtain complete data on patient care and outcome in a timely manner and to have the ability to produce reports, both regular and ad hoc, based on accurate information.

## Project Description

This project proposed to develop an automated data entry process, documenting the first responder and transport agency care, the medical direction at the base hospital, disposition from the emergency department, and for admitted patients, the patient outcome. The major objectives included development of forms and databases for data collection, training of field personnel in the use of the forms, create data reports and analysis and evaluation tools, and to plan, develop, and implement a QI program.

## Tasks/Methodology

The data collection forms were designed by committees. The representatives on the committees conferred with their constituents for input. The databases were created at the time of the form design under the Scan Image software. Additional dBase IV databases were designed by the Office Systems Coordinator to facilitate use of all the data and to ensure that all information was available for reports and statistical studies. Graphics images are kept of the forms for review, as needed, during QI projects and system evaluation.

## Outcomes

- Prehospital Field Report (patient care record).
- First Responder Form.
- CQI Plan.
- Data Reports, defined in the EMSA Data System Standards, and by local needs.

Use of these reports will provide documentation of the continuum of care for EMS patients in Ventura County. In addition, long term use of the CQI plan and data reports will allow all VC EMS system participants to identify and correct circumstances as they arise.

**Conclusion**

The data available to the LEMSA is much more complete and is processed in a much more timely manner than was able to be done prior to the grant. The availability of this data for determining contract and policy compliance, as well as for system evaluation utilizing the CQI plan gives the LEMSA a greater ability to perform its duties as the oversight agency.

VC EMS recommends that any LEMSA embarking on a similar project makes liberal use of the experience of other LEMSAs very early on in its planning process. Even with increased amounts of data collected in a much more timely manner, this remains a very labor intensive project. As mentioned previously, it is our intent to continue to investigate other technology and to continue to revise the data collection methods in Ventura County.